Method for the recovery of fuel from oil shale.

Raw shale is supplied to a pyrolyzer (13) where it is pyrolyzed by fuel gas in a fluidized bed and hot spent shale derived from a gasifier (15). The pyrolyzed shale having given up its oil and volatile hydrocarbons, rises to the top of the fluidized bed of raw shale whence it is transferred to the gasifier. Oxygen and steam are supplied to the gasifier. This composite gas reacts with the carbon of the pyrolyzed shale in a fluidized bed to produce synthesis or fuel gas. The oxygen is supplied in such quantities as not to react completely with the carbon in the pyrolyzed shale. The steam reacts with the excess of carbon. Predominantly hydrogen and carbon monoxide are produced; in addition there is a smaller quantity of carbon dioxide and methane. This hot fuel gas is transferred to the pyrolyzer. In addition, hot spent shale is transferred to the pyrolyzer. The hot fuel gas fluidizes the raw shale in the pyrolyzer and heats the raw shale separating the shale oil and product gas including volatile hydrocarbons. The oil is condensed and collected, the fuel gas is collected for utilization in the above process and also for other purposes.
### DOCUMENTS CONSIDERED TO BE RELEVANT

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<tr>
<th>Category</th>
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<tr>
<td>A</td>
<td>US-A-4 010 092 (R.F. DEERING) * Claims 1,3; column 1, line 17 - column 2, line 5</td>
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<td>GB-A-1 023 492 (OILSHALE CORPORATION) * Claims 1,5,9,11,14 *</td>
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<td>A</td>
<td>US-A-4 222 850 (C.W. MATTHEWS)</td>
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<td>US-A-4 297 201 (J.B. JONES et al.) * Claims 1-3; column 2, line 42 - column 3, line 53</td>
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<td>US-A-4 148 710 (R. BURTON) * Claims 1-4; column 1, line 65 - column 2, line 51</td>
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The present search report has been drawn up for all claims.

**THE HAGUE** 14-09-1983  PIELKA I.A.

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**CATEGORY OF CITED DOCUMENTS**

- **A**: technological background
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- **P**: intermediate document
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